Year 7 higher topic 4

Fractions

What careers would use these skills?

Musician, lawyer, judge, scientist, builder, architect, hairdresser, beautician, vet, professional athlete, personal trainer, author, chef, baker, accountant

Comparing fractions

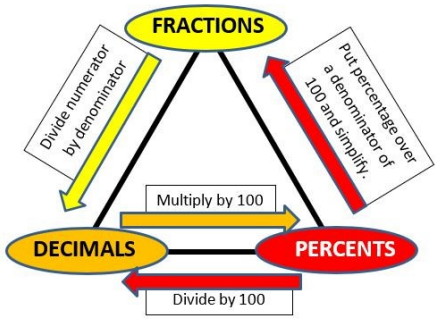
To compare fractions, they each need to be rewritten so that they have a **common denominator**.
Ascending means **smallest to biggest**. **Descending** means **biggest to smallest**.

Put in to ascending order : $\frac{3}{4}, \frac{2}{3}, \frac{5}{6}, \frac{1}{2}$

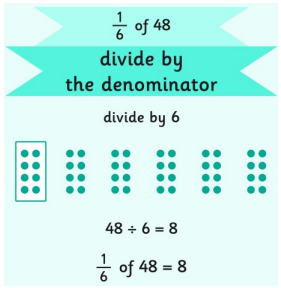
Equivalent: $\frac{9}{12}, \frac{8}{12}, \frac{10}{12}, \frac{6}{12}$

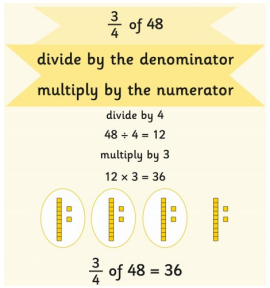
Correct order: $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$

Fraction, decimal, percentage conversion



Fractions of amounts





Dividing fractions

'Keep it, Flip it, Change it – KFC'

Keep the first fraction the same

Flip the second fraction upside down

Change the divide to a multiply

Multiply by the reciprocal of the second fraction.

$$\frac{3}{4} \div \frac{5}{6} = \frac{3}{4} \times \frac{6}{5} = \frac{18}{20} = \frac{9}{10}$$

Working with mixed numbers

To convert from a mixed number to an improper fraction, multiply the whole number (3) by the denominator (5) and ADD the numerator (2) This becomes the numerator; leave the denominator as it as.

$$\frac{11}{4} = 2\frac{3}{4}$$

To convert from an improper fraction to a mixed number, divide the numerator by the denominator.. Write down the whole number answer. Then write down any remainder above the denominator.

$$3\frac{2}{5} = \frac{17}{5}$$

Multiplying fractions

Multiply the **numerators** together and **multiply** the **denominators** together then simplify. $\frac{3}{8} \times \frac{2}{9} = \frac{6}{72} = \frac{1}{12}$

Adding fractions

- If they don't have the same denominator, then convert them to equivalent fractions with the same denominator. $\frac{7}{15} + \frac{1}{5}$ $\frac{7}{15} + \frac{1 \times 3}{5 \times 3} = \frac{7}{15} + \frac{3}{15} = \frac{10}{15}$
- Once they have the same denominator, add the numerators together but remember the denominator stays the same. $\frac{10}{15} = \frac{10 \div 5}{15 \div 5} = \frac{2}{3}$
- Write your answer with the new numerator over the denominator (you may need to convert from an improper fraction to a mixed number or simplify the fraction)

Subtracting fractions

- If they don't have the same denominator, then convert them to equivalent fractions with the same denominator. $\frac{7}{8} - \frac{5}{16} = ?$
- Once they have the same denominator, subtract the second numerator from the first but remember the denominator stays the same. $\frac{7 \times 2}{8 \times 2} - \frac{5}{16} = \frac{14}{16} - \frac{5}{16} = \frac{9}{16}$
- Write your answer with the new numerator over the denominator.

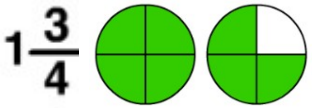
Improper fractions

A fraction equivalent to or larger than one whole: the numerator is larger than or equal to the denominator, eg

numerator $\frac{5}{2}$ denominator

Mixed numbers

A number formed of both an **integer part** and a **fraction part**.
This is an example of a mixed number.



Simplifying fractions

Divide the numerator and denominator by the highest common factor.

$$\frac{15}{20} \overset{\div 5}{=} \frac{3}{4}$$